

Remarks

Applicant notes with appreciation the allowance of claims 41 and 43 in addition to claims 9-11, 22, 23, 32, 33 and 35-39 previously allowed.

In paragraph 2 of the Office Action, the Examiner has rejected claims 40 and 42 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,376,084 to McKee for the reasons cited. Also, in paragraph 20 of the Office Action, the Examiner has withdrawn the previously indicated allowability of claims 40 and 42 “in view of a broader interpretation of the claims.” The Examiner states, “The claims do not recite a relationship between the location of the bearing elements and first and second planar bearing surfaces.”

In paragraph 17 of the Office Action, the Examiner has objected to claims 5 and 18 but has indicated these claims would be allowable if rewritten in independent form. Claims 5 and 18 have been cancelled herein and the limitations thereof have been added to claims 40 and 42, respectively. In other words, claims 40 and 42 are now claims 5 and 18 in independent form. Accordingly, claims 40 and 42 are now allowable.

While Applicant respectfully disagrees with the new rejection of claims 40 and 42 based on McKee, the rejection is now moot in view of the above-described amendments to the claims.

In paragraph 3 of the Office Action, the Examiner has rejected claims 26, 27, 29, 30, 34 and 44 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 579,857 to Bradshaw. The previously-indicated allowability of claim 44 has been withdrawn in paragraph 19 of the Office Action.

Applicant respectfully disagrees. For example, Bradshaw does not disclose a bearing cage with openings in which bearing elements are disposed. However, to facilitate prosecution of the application, claims 26, 27, 29, 30, 34 and 44 have been cancelled herein, making this rejection moot.

In paragraph 7 of the Office Action, the Examiner has rejected claims 1-3 and 14-16 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,376,084 to McKee in view of U.S. Patent No. 5,370,404 to Klein et al. The Examiner states:

McKee discloses a seal for use adjacent to a rotating surface (12) comprising a ring (56) having a sealing surface (68) sealing between a portion of the stationary surface (48) and the sealing surface. The ring (56) is spaced from the rotating surface and has a race engagement surface (72) separate from the sealing surface. McKee also discloses a first race (16), a second race (38 or 40), and a plurality of bearing elements (34). While McKee describes features 56 and 58 as being cushioning elements, examiner notes this structure inherently provides a sealing function. For this reason, examiner considers 56 and 58 to be seals. McKee fails to disclose a metal-to-metal seal.

The Examiner comments further in paragraph 8:

Klein teaches a sealing arrangement (4) between stationary surface and sealing surface. The seal provides a metal-to-metal seal (at 17, against 2). Ring insures reliable fixation of the seal arrangement within the bore, and creates a friction bond between the ring 17 and wall 2. Examiner considers this friction bond to be a seal. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify McKee as taught by Klein, such that McKee's seal 56 includes metal reinforcement ring (17 of Klein) to ensure reliable fixation of the seal arrangement within the bore

In paragraph 9 of the Office Action, the Examiner states:

With respect to claims 2 and 3, McKee discloses a bearing cage (36) disposed between first and second races, defining bearing openings. The bearing elements (34) are disposed in the openings. McKee also discloses the sealing surface (68) to be an outer peripheral surface of the ring.

With respect to claim 14, the Examiner makes similar comments in paragraph 10 of the Office Action, again noting that McKee fails to disclose a metal-to-metal seal. Paragraph 11 of the Office Action appears to be identical to paragraph 8.

With respect to claims 15 and 16, the Examiner states in paragraph 12:

[T]he housing sealing surface is substantially cylindrical and the ring sealing surface (68) is substantially concentric with the housing sealing surface. McKee also discloses the ring sealing surface (68) to be an outer peripheral surface of the ring.

Applicant respectfully traverses this rejection for the following reasons.

As acknowledged by the Examiner, McKee does not have a metal-to-metal feature. Elements 56 and 58 are described as “vibration dampers.” No mention is made of sealing. Certainly, the mere ability of an element to dampen vibration alone does not make it capable of sealing. For example, a spring will dampen vibrations but no one would say that it would seal anything.

Reinforcement ring 17 provides a “friction bond.” A friction bond does not connote sealing. For example, a retainer ring is held in place by a friction bond, but it does not provide any sealing capability. Sealing is not mentioned as a characteristic of reinforcement ring 17. In fact, reinforcement ring 17 is “mantled with an elastomeric material” (col. 4, line 37) to provide sealing. The sealing is carried by a radially inwardly projecting portion of mantling 10 and by lip 22 on the mantling. In FIG. 2 of Klein, sealing is also provided by a radially outwardly projecting portion of mantling 10. Clearly, Klein does not expect reinforcement ring 17 to seal, and combining it somehow into McKee to replace the vibration dampers would not change anything from a sealing standpoint. Neither the vibration dampers of McKee nor the reinforcement ring of Klein

have sealing mentioned as a function, and to substitute one for the other does not change this.

However, replacing the vibration dampers of McKee with a metal-to-metal seal would destroy the specifically described function of the vibration dampers. That is, if elements 56 and 58 were replaced with metal-to-metal seals, there could be no vibration damping. Any vibration from the rotating elements would be transmitted to the stationary elements because there would be nothing to absorb or dampen any vibration. Therefore, McKee teaches *away* from metal-to-metal contact in order to carry out the significant feature of vibration damping. McKee specifically provides vibration damping and does not need the “reliable fixation” of Klein. Replacing the vibration dampers with metal-to-metal contact would render McKee unsatisfactory for its intended purpose and therefore cannot make a case of *prima facie* obviousness under 35 U.S.C. §103(a). MPEP 2143.01. Therefore, the rejection should be withdrawn and the claims allowed.

In paragraph 13 of the Office Action, the Examiner has rejected claims 12 and 24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,376,084 to McKee in view of U.S. Patent No. 5,370,404 to Klein et al., and in further view of U.S. Patent No. 5,425,584 to Ide. The Examiner notes that neither McKee nor Klein discloses roller bearing elements but that it would be obvious to substitute those shown in Ide. Applicant traverses this rejection for the following reasons.

All of the arguments presented above with respect to any combination of McKee and Klein also apply to claims 12 and 24. The mere inclusion of Ide’s roller bearing reference does not change the above-described deficiencies of the other references.

In paragraph 15 of the Office Action, the Examiner has rejected claims 6 and 19 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,376,084 to McKee in view of U.S. Patent No. 5,425,584 to Ide.

Claims 6 and 19 depend from allowable claims 40 and 42, respectively. So, this rejection of claims 6 and 19 is now moot, and these claims should also be allowed.

Summary

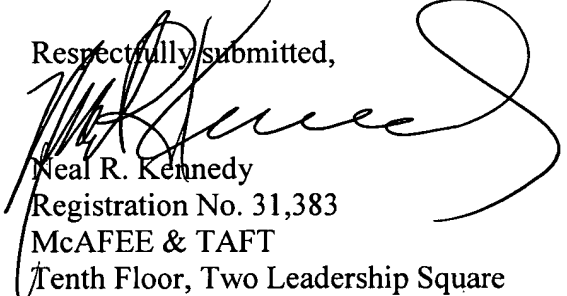
Claims 9-11, 22, 23, 32, 33, 35-39, 41 and 43 have been allowed.

Claims 5 and 18 have been cancelled and the limitations thereof included in claims 40 and 42, respectively, so they should now be allowable. Claims 6 and 19 depend from 40 and 42, respectively, so they too should be allowable.

Claims 26, 27, 29, 30, 34 and 44 have also been cancelled.

In view of the arguments presented herein, it is believed that the remaining claims are patentably distinguishable over the prior art of record and should also be allowed.

Respectfully submitted,



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